



## Final Assays identify additional mineralisation at One Tree Hill

### HIGHLIGHTS

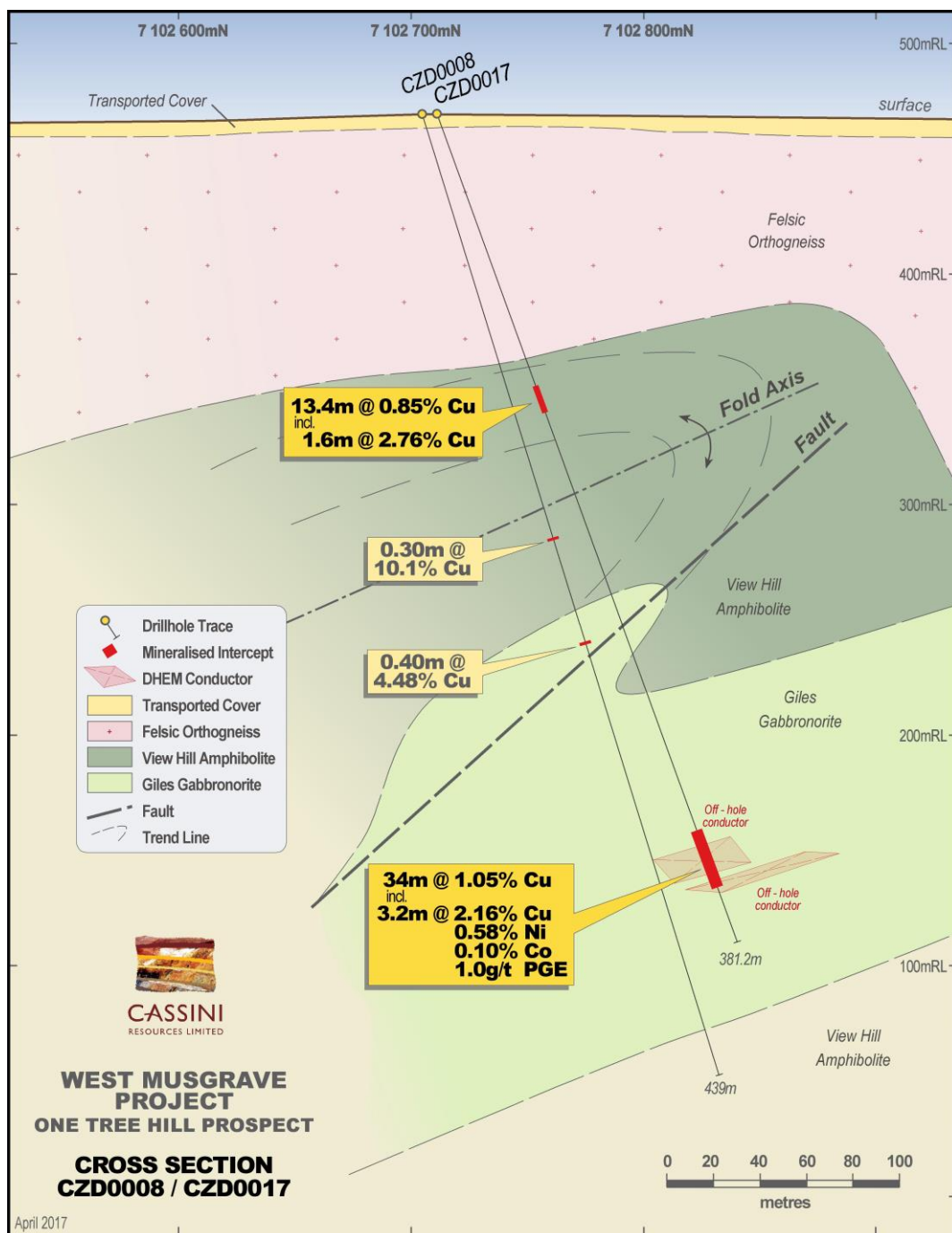
- Final assays received for CZD0017
- Additional broad zone of hydrothermal mineralisation returned in hangingwall
  - 13.4m @ 0.85% Cu including 1.6m @ 2.76% Cu
- Complements deeper magmatic zone: 34m @ 1.05% Cu + 0.5 g/t PGE
- Broad anomalism points to large parental magmatic source at depth
- Follow-up drilling a regional exploration priority

Cassini Resources Limited (ASX:CZI) ("Cassini" or the "Company") is pleased to provide results of further sampling at the One Tree Hill Prospect within the West Musgrave Project ("WMP" or the "Project"), located in Western Australia as part of the Earn-in/JV Agreement with OZ Minerals Limited (ASX:OZL) ("OZ Minerals"). Initial results from One Tree Hill were released on 23 January 2017.

### One Tree Hill Program

The Company is actively exploring the WMP and recently made a new discovery at the One Tree Hill Prospect (Figure 1) late in 2016. Drill hole CZD0017 intersected a massive sulphide zone returning 3.2m @ 2.16% Cu, 0.58% Ni, 0.1% Co and 1.0g/t PGE within a broader disseminated zone of 34m @ 1.05% Cu + 0.5 g/t PGE. Due to time constraints only the strongest mineralisation was analysed initially. More thorough sampling has now been completed through the upper or hangingwall zone which has returned an intercept of 13.4m @ 0.85% Cu from 129.6m, including 1.6m @ 2.76% Cu from 134.9m (Figure 1). Almost the entire hole is copper anomalous (>250ppm) with numerous spikes of PGE's (~0.1 g/t).

The hangingwall mineralisation occurs as veins and is likely to be hydrothermal in nature, remobilised from the primary magmatic sulphide body at depth. This zone is possibly significant enough to contribute to the economic viability of the prospect, being considerably closer to surface and may also assist in vectoring towards the deeper primary magmatic sulphide body. The Company is encouraged by the significant width of the hangingwall anomalism which is supportive of a large parental magmatic source. Further drilling to follow-up the massive sulphide zone at the bottom of CZD0017 is an exploration priority.



**FIGURE 1.** One Tree Hill section showing off-hole conductors from CZD0008, mineralised intersections in CZD0017 and current geology interpretation.

Managing Director Richard Bevan commented “These additional results reinforce the opportunity that we have uncovered at OTH. They support the Company’s belief that this could be part of a much larger mineralised system and once again shows the significant exploration upside within the West Musgrave Project. We look forward to following this up later in 2017.”

**Table 1. CZD0017 Significant drill intercepts (>0.2% Cu).**

HOLE ID	East	North	RL	Dip	Azi	EOH (m)	Intersection					
							From (m)	Width (m)	Cu %	Ni %	Co %	PGE g/t
CZC0017	360410	7102705	481	-70	360	381.2	129.6	13.4	0.85	0.01	0.01	0.1
						Incl	134.9	1.6	2.76	0.01	0.01	<0.1
							332.0	34.0	1.05	0.12	0.02	0.5
						Incl	344.85	3.2	2.16	0.58	0.10	1.0

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### About the Company

Cassini Resources Limited (ASX: CZI) is a base and precious metals developer and explorer based in Perth. In April 2014, the Company acquired its flagship West Musgrave Project (WMP), located in Western Australia. The WMP is a world-class asset which currently has over 850,000 tonnes of contained nickel and 1.8 million tonnes of contained copper in Resource. The WMP is a new mining camp with three existing nickel and copper sulphide deposits and a number of other significant regional exploration targets already identified. The WMP is the largest undeveloped nickel copper project in Australia.

In August 2016, Cassini entered into a \$36M Earn-in/Joint Venture (JV) agreement with prominent Australian mining company OZ Minerals Ltd (ASX: OZL). The JV will fund the continued development and exploration of the WMP, and provides a clear pathway to a decision to mine and potential cash flow for the Company.

Cassini is also progressing its Mt Squires Gold Project in WA and an early stage zinc exploration project in the West Arunta region of WA.

Current Highlights:

- Cassini's West Musgrave project contains one of Australia's largest undeveloped nickel/copper deposits
- Cassini is free carried to a "decision to mine" via a 3 stage A\$36m Earn-in/Joint Venture agreement with OZ Minerals
- Previous Scoping Study presented highly attractive economics, supporting a long life, open pit development
- Significant exploration upside across portfolio with Succoth Copper deposit and multiple other mineralised targets identified at additional deposits
- High impact A\$8m regional exploration program to be executed in Stages 2 and 3 of the joint venture
- Track record of prudent investment and capital management with a CY2016 exploration / administration ratio of 1.5x (compares favourably to peer group average of 0.9x)<sup>1</sup>
- Leveraged to increases in nickel prices with reducing global inventories and a looming supply shortage, as well as significant exposure to copper

## Competent Persons Statement

The information in this report that relates to Exploration Results is based on information compiled or reviewed by Mr Greg Miles, who is an employee of the company. Mr Miles is a Member of the Australian Institute of Geoscientists and has sufficient experience of relevance to the styles of mineralisation and the types of deposits under consideration, and to the activities undertaken, to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Miles consents to the inclusion in this report of the matters based on information in the form and context in which it appears.

The Company is not aware of any new information or data, other than that disclosed in this report, that materially affects the information included in this report and that all material assumptions and parameters underpinning Exploration Results, Mineral Resource Estimates and Production Targets as reported in the market announcements dated 13, April 2015 and 7 December 2015, continue to apply and have not materially changed. Further details about the One Tree Hill Prospect can be found in market announcement dated 23 January 2017.

## APPENDIX A

### West Musgrave Project Mineral Resources Statement<sup>1,2</sup>

Prospect	Classification	Tonnes (Mt)	Ni (%)	Cu (%)	Co (ppm)	Au (ppm)	Pt (ppm)	Pd (ppm)
Nebo	Indicated	25.8	0.52	0.46	215	0.05	0.07	0.09
	Inferred	3.0	0.60	0.48	229	0.04	0.08	0.10
	<b>Total</b>	<b>28.9</b>	<b>0.53</b>	<b>0.46</b>	<b>217</b>	<b>0.05</b>	<b>0.07</b>	<b>0.09</b>
Babel	Indicated	69.7	0.39	0.42	139	0.07	0.10	0.12
	Inferred	104.5	0.38	0.40	135	0.08	0.11	0.12
	<b>Total</b>	<b>174.2</b>	<b>0.39</b>	<b>0.41</b>	<b>137</b>	<b>0.08</b>	<b>0.11</b>	<b>0.12</b>
<b>Nebo + Babel</b>	<b>Total</b>	<b>203.1</b>	<b>0.41</b>	<b>0.42</b>	<b>148</b>	<b>0.08</b>	<b>0.10</b>	<b>0.12</b>
Succoth	Inferred	156	0.06	0.60	-	0.02	0.04	0.11

#### NOTES:

1. Nebo-Babel Indicated and Inferred Mineral Resource (0.3%Ni cut-off), February 2015
2. Succoth Deposit Inferred Mineral Resource estimate (0.3% Cu cut-off), December 2015

## ANNEXURE 1:

The following Tables are provided to ensure compliance with the JORC Code (2012) edition requirements for the reporting of the Exploration Results at the One Tree Hill Prospect.

### Section 1: Sampling Techniques and Data (Criteria in this section apply to all succeeding sections)

Criteria	JORC Code explanation	Commentary
<b>Sampling techniques</b>	<i>Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down-hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</i>	The diamond drill hole will be sampled on nominal 1m intervals. The hole was angled towards grid north (002° magnetic azimuth) at -70 degrees dip to optimally intersect the electromagnetic conductor.
	<i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i>	The drill hole location will be picked up by survey contractors at the completion of the drilling, the collar is currently surveyed by handheld GPS unit. Sampling will be carried out under Cassini protocols and QAQC procedures as per industry best practices.
	<i>Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</i>	Diamond drilling was used to obtain approximately 1m samples from which 3 kg will be pulverised (total prep) to produce a sub sample for analysis by four acid digest with an ICP/AES or ICP/MS finish (0.25 gram) for base metals or a FA/AAS finish (40 gram) for Au, Pt and Pd.
<b>Drilling techniques</b>	<i>Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic etc) and details (e.g. core diameter, triple of standard tube, depth of diamond tails, face-sampling bit or other type, whether core is orientated and if so, by what method, etc).</i>	Diamond drilling accounts for 100% of the drilling completed by Cassini and comprises PQ3 and HQ3 diameter core samples. Final hole depth is 381.2m.
<b>Drill sample recovery</b>	<i>Method of recording and assessing core and chip sample recoveries and results assessed.</i>	Overall core recoveries are >95% and there has been no significant sample recovery problems.
	<i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i>	Samples are routinely checked for recovery.
	<i>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</i>	No sample bias has been observed
<b>Logging</b>	<i>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</i>	All core will be geologically logged and the level of understanding of geological variables increases with the maturity of the prospect.
	<i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i>	Logging at One Tree Hill recorded lithology, mineralogy, mineralisation, weathering, colour and other relevant features of the samples. Logging of core is both qualitative (e.g. colour) and quantitative (e.g. mineral percentages).
	<i>The total length and percentage of the relevant intersections logged.</i>	All diamond core will be logged in full.
	<i>If core, whether cut or sawn and whether quarter, half</i>	Half core will be sampled.

<b>Criteria</b>	<b>JORC Code explanation</b>	<b>Commentary</b>
<b>Sub-sampling techniques and sample preparation</b>	<i>or all core taken.</i>	
	<i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i>	Not applicable as not non-core.
	<i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i>	The sample preparation of diamond samples at One Tree Hill follows industry best practice in sample preparation involving oven drying, followed by pulverisation of the entire sample (total prep) using Essa LM5 grinding mills to a grind size of 90% passing 75 micron.
	<i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i>	Field QC procedures involve the use of certified reference material (CRM) as assay standards and blanks along with field duplicates. The insertion rate of these will average 1:15 with an increased rate in mineralised zones.
	<i>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</i>	Quarter core duplicate sampling will be 1-2% of total sampling.
	<i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i>	Sample sizes are considered appropriate for the rock type, style of mineralisation (massive and disseminated sulphides), the thickness and consistency of the intersections, the sampling methodology and percent value assay ranges for the primary elements at One Tree Hill.
<b>Quality of assay data and laboratory tests</b>	<i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i>	The analytical techniques used are four acid digest multi element suite with ICP/AES or ICP/MS finish (25 gram) for base metals and a FA/AAS for previous metals. The acids used are hydrofluoric, nitric, perchloric and hydrochloric acids, suitable for silica based samples. Total sulphur is assayed by combustion furnace. These methods approach total dissolution of most minerals.
	<i>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</i>	Hand held assay devices have not been reported.
	<i>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</i>	Sample preparation for fineness were carried by the laboratory as part of their internal procedures to ensure the grind size of 90% passing 75 micron was being attained. Laboratory QAQC involves the use of internal lab standards using certified reference material, blanks, splits and replicates as part of the in-house procedures.  Certified reference materials, having a good range of values, were inserted blindly and randomly. Results highlight that sample assay values are accurate and that contamination has been contained.  Repeat or duplicate analysis for samples reveals that precision of samples is within acceptable limits.
<b>Verification of sampling and assaying</b>	<i>The verification of significant intersections by either independent or alternative company personnel.</i>	Both the Exploration Manager and the Technical Director of Cassini have inspected the core samples.
	<i>The use of twinned holes.</i>	To date Cassini has not twinned any drill holes.

<b>Criteria</b>	<b>JORC Code explanation</b>	<b>Commentary</b>
	<i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i>	Primary data was collected for One Tree Hill using a set of standard Field Marshal templates on laptop computers using lookup codes. The information was sent to Geobase Australia for validation and compilation into a SQL database server.
	<i>Discuss any adjustment to assay data.</i>	No adjustments or calibrations were made to any assay data.
<b>Location of data points</b>	<i>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</i>	Holes drilled to date by Cassini have been located with a Garmin hand-held GPS and are assumed to be accurate to ±5m. This is considered appropriate for the drill hole spacing. At the completion of the drill program, survey contractors will be employed to complete differential GPS surveying.  Downhole surveys were completed every 5m using north-seeking gyroscopes after hole completion. Stated accuracy is ± 0.25° in azimuth and ± 0.05° in inclination.
	<i>Specification of the grid system used.</i>	The grid system for West Musgrave Project is MGA_GDA95, Zone 52.
	<i>Quality and adequacy of topographic control.</i>	The tenement package exhibits subdued relief with undulating hills and topographic representation is sufficiently controlled.
<b>Data spacing and distribution</b>	<i>Data spacing for reporting of Exploration Results.</i>	Drill hole spacing is currently too variable to define.
	<i>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</i>	Not applicable as drill hole spacing is currently too variable to define.
	<i>Whether sample compositing has been applied.</i>	No.
<b>Orientation of data in relation to geological structure</b>	<i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i>	The drill holes are drilled towards local grid north and northwest at -70° dip to intersect the mineralised zones at a close to perpendicular relationship for the bulk of the conductor.
	<i>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</i>	To date, orientation of mineralised zones has been favourable for perpendicular drilling and sample widths are not considered to have added a sampling bias.
<b>Sample security</b>	<i>The measures taken to ensure sample security.</i>	Sample chain of custody is managed by Cassini. Samples for the West Musgrave Project are stored on site and delivered to Perth by recognised freight service and then to the assay laboratory by a Perth-based courier service. Whilst in storage the samples are kept in a locked yard. Tracking sheets tracks the progress of batches of samples.
<b>Audits or reviews</b>	<i>The results of any audits or reviews of sampling techniques and data.</i>	No reviews have been carried out to date.

**Section 2: Reporting of Exploration Results** (Criteria listed in the preceding section also apply to this section)

<b>Criteria</b>	<b>JORC Code explanation</b>	<b>Commentary</b>			
<b>Mineral tenement and land tenure status</b>	<i>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</i>	One Tree Hill is located wholly within Exploration Lease E69/1530. Cassini entered into an agreement to acquire 100% of the leases comprising the West Musgrave Project (M69/0072, M69/0073, M69/0074, M69/0075, E69/1505, E69/1530, E69/2201, E69/2069, E69/2070, E69/2313, E69/2338), over which the previous operator retains a 2% NSR. The tenement sits within Crown Reserve 17614. The Project area is subject to an earn-in and joint venture agreement with OZ Minerals Ltd.			
	<i>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</i>	All tenements are in good standing and have existing Aboriginal Heritage Access Agreements in place. No mining Agreement has been negotiated.			
<b>Exploration done by other parties</b>	<i>Acknowledgment and appraisal of exploration by other parties.</i>	Previous exploration has been conducted by BHP Billiton, WMC and Cassini. The work completed by BHP Billiton and WMC is considered by Cassini to be of a high standard.			
<b>Geology</b>	<i>Deposit type, geological setting and style of mineralisation.</i>	The project lies within the West Musgrave Province of Western Australia, which is part of an extensive Mesoproterozoic orogenic belt. The Nebo-Babel and Succoth deposits lie within mafic intrusions of the Giles Complex (ca. 1068Ma) that has intruded into amphibolite to granulite facies orthogneiss and mafic granulite country rocks. Mineralisation is hosted within tubular, chonolithic gabbro-norite bodies and are expressed primarily as broad zones of disseminated sulphide and co-magmatic or potentially remobilised accumulations of more rich, matrix to massive sulphides.			
<b>Drill hole information</b>	<p><i>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:</i></p> <ul style="list-style-type: none"> <li>• <i>easting and northing of the drill hole collar</i></li> <li>• <i>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i></li> <li>• <i>dip and azimuth of the hole</i></li> <li>• <i>down hole length and interception depth</i></li> <li>• <i>hole length.</i></li> </ul>	<p>The drill hole is located at</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;">360410E</td> <td style="text-align: center;">7102705N</td> <td style="text-align: center;">481RL</td> </tr> </table> <p>Full information regarding hole details will be disclosed on release of assay results. Preliminary hole details are reported herein. The hole was angled towards grid north (002° magnetic azimuth) at -70 degrees dip to optimally intersect the electromagnetic conductor.</p>	360410E	7102705N	481RL
360410E	7102705N	481RL			
	<i>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</i>				
<b>Data aggregation methods</b>	<i>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</i>	Weighted averages for One Tree Hill mineralisation were calculated using parameters of a 0.2% Cu lower cut-off, no minimum reporting length, no maximum length of consecutive internal waste and the minimum grade for the final composite of 0.2% Cu.			
	<i>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</i>	Short lengths of high grade results use either a nominal 1% Cu lower cut-off or a geological boundary such as a massive sulphide interval, no minimum reporting length and 2m maximum interval dilution and the minimum grade of the final composite of 1% Cu			
	<i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i>	Not applicable as no metal equivalent values are being stated.			



<b>Criteria</b>	<b>JORC Code explanation</b>	<b>Commentary</b>
<b>Relationship between mineralisation widths and intercept lengths</b>	<i>These relationships are particularly important in the reporting of Exploration Results. If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</i>	Mineralisation at One Tree Hill is poorly defined and orientations are approximate. Mineralisation is generally intersected obliquely to true-width and approximations have been made based on geological interpretations.  Refer to Annexure 1 and Figures in body of text.
<b>Diagrams</b>	<i>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</i>	Refer to Figures in body of announcement .
<b>Balanced reporting</b>	<i>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</i>	All results have been reported.
<b>Other substantive exploration data</b>	<i>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</i>	Only preliminary exploration data is currently available and other exploration data is not meaningful nor material. More comprehensive data will be released with assay results as they become available.
<b>Further work</b>	<i>The nature and scale of planned further work (eg. tests for lateral extensions or depth extensions or large-scale step-out drilling).  Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i>	Cassini aims to test the continuity of known higher grade zones of mineralisation at One Tree Hill with the aim of finding additional mineralised zones and to define a JORC compliant Indicated Resource.  Figures have been included in body of announcement.